



FORM PTO-1449

ATTY. DOCKET NO.
1997.0010003APPLICATION NO.
09/698,249APPLICANT
Fu et al.FILING DATE
October 30, 2000GROUP
2124

U.S. PATENT DOCUMENTS

| EXAMINER INITIAL | | DOCUMENT NUMBER | DATE | NAME | CLASS | SUB-CLASS | FILING DATE |
|------------------|-----|-----------------|---------|--------------|-------|-----------|------------------------|
| M | AA1 | 3,646,337 | 02/1972 | Bifulco, Jr. | | | |
| | AB1 | 3,974,367 | 08/1976 | Mayer | | | RECEIVED |
| | AC1 | 4,340,939 | 07/1982 | Mayer | | | AUG 29 2003 |
| | AD1 | 4,719,833 | 01/1988 | Katoh et al. | | | |
| | AE1 | 5,276,633 | 01/1994 | Fox et al. | | | Technology Center 2100 |
| | AF1 | 5,373,236 | 12/1994 | Tsui et al. | | | |
| | AG1 | 5,500,874 | 03/1996 | Terrell | | | |

FOREIGN PATENT DOCUMENTS

| EXAMINER INITIAL | | DOCUMENT NUMBER | DATE | COUNTRY | CLASS | SUB-CLASS | TRANSLATION |
|------------------|-----|-----------------|------|---------|-------|-----------|-------------|
| | AH1 | | | | | | |
| | AI1 | | | | | | |
| | AJ1 | | | | | | |

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

| | | | |
|--|----|---|--|
| | AK | 1 | Ahn, Y. et al., "VLSI Design Of A Cordic-Based Derotator," <i>Proc. 1998 IEEE Int. Symp. Circuits Syst.</i> , Vol. II, pp. 449-452 (May 1998). |
| | AL | 1 | Andronico, M. et al., "A New Algorithm for Fast Synchronization in a Burst Mode PSK Demodulator," <i>Proc. 1995 IEEE Int. Conf. Comm.</i> , Vol. 3, pp. 1641-1646 (June 1995). |
| | AM | 1 | Arivoli, T. et al., "A Single Chip DMT Modem for High-Speed WLANs," <i>Proc. 1998 Custom Integrated Circuits Conf.</i> , IEEE, pp. 9-11 (May 1998). |
| | AN | 1 | Boutin, N., "An Arctangent Type Wideband PM/FM Demodulator With Improved Performance," <i>IEEE Trans. Consumer Electron.</i> , Vol. 38, No. 1, pp. 5-9 (February 1992). |
| | AO | 1 | Buchanan, K. et al., "IMT-2000: Service Provider's Perspective," <i>IEEE Personal Communications</i> , pp. 8-13 (August 1997). |
| | AP | 1 | Chen, A. et al., "Modified CORDIC Demodulator Implementation for Digital IF-Sampled Receiver," <i>Proc. Globecom 1995</i> , Vol. 2, pp. 1450-1454 (1995). |

EXAMINER

m

DATE CONSIDERED

10/2003

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

| | | | |
|--|--|----------------------------------|---------------------------------|
| FORM PTO-1449 INFORMATION DISCLOSURE STATEMENT PATENT & TRADEMARK OFFICE | | ATTY. DOCKET NO. 1997.0010003 | APPLICATION NO. 09/698,249 |
| | | APPLICANT Fu et al. | FILING DATE October 30, 2000 |
| | | GROUP 2124 | |



U.S. PATENT DOCUMENTS

| EXAMINER INITIAL | | DOCUMENT NUMBER | DATE | NAME | CLASS | SUB-CLASS | FILING DATE |
|------------------|-----|-----------------|---------|----------------|-------|-----------|-----------------|
| <i>mar</i> | AA2 | 6,144,712 | 11/2000 | Samueli et al. | | | 10/09/1997 |
| <i>↓</i> | AB2 | 09/698,246 | | Fu et al. | | | 10/30/2000 |
| | AC2 | 09/699,088 | | Fu et al. | | | 10/30/2000 |
| | AD2 | | | | | | RECEIVED |
| | AE2 | | | | | | |
| | AF2 | | | | | | AUG 29 2003 |
| | AG2 | | | | | | |

Technology Center 2100

FOREIGN PATENT DOCUMENTS

| EXAMINER INITIAL | | DOCUMENT NUMBER | DATE | COUNTRY | CLASS | SUB-CLASS | TRANSLATION |
|------------------|-----|-----------------|------|---------|-------|-----------|-------------|
| | AH2 | | | | | | |
| | AI2 | | | | | | |
| | AJ2 | | | | | | |

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

| | | | |
|--|----|---|---|
| | AK | 2 | Chen, A. et al., "Reduced Complexity CORDIC Demodulator Implementation for D-AMPS and Digital IF-Sampled Receiver," <i>Proc. Globecom 1998</i> , Vol. 3, pp. 1491-1496 (1998). |
| | AL | 2 | Cho, K., <i>A Frequency-Agile Single-Chip QAM Modulator with Beamforming Diversity</i> , Dissertation Submitted to the University of California, Los Angeles, 137 pages (1999). |
| | AM | 2 | Critchlow, D.N., <i>The Design and Simulation of a Modulatable Direct Digital Synthesizer With Non Iterative Coordinate Transformation and Noise Shaping Filter</i> , Thesis Submitted to the University of California, San Diego, 55 pages (1989). |
| | AN | 2 | Daneshrad, B., Ph.D., <i>System design of a 1.6 Mbps all-digital QAM transceiver for digital subscriber line applications</i> , Dissertation Submitted to the University of California, Los Angeles, 156 pages (1993). |
| | AO | 2 | Erup, L. et al., "Interpolation in Digital Modems - Part II: Implementation and Performance," <i>IEEE Transactions on Communications</i> , Vol. 41, No. 6, pp. 998-1008 (June 1993). |
| | AP | 2 | Farrow, C.W., "A Continuously Variable Digital Delay Element," <i>ISCAS' 88</i> , IEEE, pp. 2641-2645 (1988). |

EXAMINER

mar

DATE CONSIDERED

12/03

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

| | | | | | |
|----------------------------------|--|---|--|-----------------------------------|-------------------------------|
| FORM PTO-1449 | | O I P E AUG 28 2003 P A T E N T T R A D E M A R K O F F I C E | | ATTY. DOCKET NO. 01997.0010003 | APPLICATION NO. 09/698,249 |
| INFORMATION DISCLOSURE STATEMENT | | | | APPLICANT Fu et al. | |
| | | | | FILING DATE October 30, 2000 | GROUP 2124 |

U.S. PATENT DOCUMENTS

| EXAMINER INITIAL | | DOCUMENT NUMBER | DATE | NAME | CLASS | SUB-CLASS | FILING DATE |
|------------------|-----|-----------------|------|------|-------|-----------|------------------------|
| | AA3 | | | | | | |
| | AB3 | | | | | | RECEIVED |
| | AC3 | | | | | | |
| | AD3 | | | | | | AUG 29 2003 |
| | AE3 | | | | | | |
| | AF3 | | | | | | Technology Center 2100 |
| | AG3 | | | | | | |

FOREIGN PATENT DOCUMENTS

| EXAMINER INITIAL | | DOCUMENT NUMBER | DATE | COUNTRY | CLASS | SUB-CLASS | TRANSLATION |
|------------------|-----|-----------------|------|---------|-------|-----------|-------------|
| | AH3 | | | | | | |
| | AI3 | | | | | | |
| | AJ3 | | | | | | |

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

| | | | |
|--|----|---|--|
| | AK | 3 | Fitz, M.P. and Lindsey, W.C., "Decision-Directed Burst-Mode Carrier Synchronization Techniques," <i>IEEE Transactions on Communications</i> , Vol. 40, No. 10, pp. 1644-1653 (October 1992). |
| | AL | 3 | Fowler, D.L. and Smith, J.E., "An Accurate, High Speed Implementation of Division by Reciprocal Approximation," <i>Proc. 9th Symp. On Computer Arithmetic</i> , pp. 60-67 (1989). |
| | AM | 3 | Freeman, H., <i>Discrete-Time Systems: An Introduction to the Theory</i> , John Wiley & Sons, Inc., Library of Congress Catalog Card Number 65-14255, Entire Book submitted (1965). |
| | AN | 3 | Fu, D. and Willson Jr., A.N., "Interpolation In Timing Recovery Using A Trigonometric Polynomial And Its Implementation," <i>Globecom 1998 Comm. Theory Mini Conf. Record</i> , IEEE, pp. 173-178 (November 1998). |
| | AO | 3 | Gardner, F.M., "Interpolation in Digital Modems - Part I: Fundamentals," <i>IEEE Transactions on Communications</i> , Vol. 41, No. 3, pp. 501-507 (March 1993). |
| | AP | 3 | Gardner, S., "Burst modem design techniques: part 1," <i>Electronic Engineering</i> , p. 85(5), (September 1999). |

EXAMINER

Duan

DATE CONSIDERED

12/1/2003

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

ODMAIMHODMAISKGF_DC1;154924;1

| | | | |
|--|--|----------------------------------|-------------------------------|
| FORM PTO-1449 INFORMATION DISCLOSURE STATEMENT | | ATTY. DOCKET NO. 1997.0010003 | APPLICATION NO. 09/698,249 |
| | | APPLICANT Fu et al. | |
| | | FILING DATE October 30, 2000 | GROUP 2124 |

U.S. PATENT DOCUMENTS

| EXAMINER INITIAL | | DOCUMENT NUMBER | DATE | NAME | CLASS | SUB-CLASS | FILING DATE |
|------------------|-----|-----------------|------|------|-------|-----------|-------------|
| | AA4 | | | | | | |
| | AB4 | | | | | | |
| | AC4 | | | | | | |
| | AD4 | | | | | | |
| | AE4 | | | | | | |
| | AF4 | | | | | | |
| | AG4 | | | | | | |

RECEIVED

AUG 29 2003

Technology Center 2100

FOREIGN PATENT DOCUMENTS

| EXAMINER INITIAL | | DOCUMENT NUMBER | DATE | COUNTRY | CLASS | SUB-CLASS | TRANSLATION |
|------------------|-----|-----------------|------|---------|-------|-----------|-------------|
| | AH4 | | | | | | |
| | AI4 | | | | | | |
| | AJ4 | | | | | | |

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

| | | | |
|--|----|---|--|
| | AK | 4 | Gardner, S., "Burst modem design techniques: part 2," <i>Electronic Engineering</i> , p. 75(5), (December 1999). |
| | AL | 4 | Koren, I., <i>Computer Arithmetic Algorithms</i> , Prentice Hall, ISBN No. 0-13-151952-2, Entire book submitted (1993). |
| | AM | 4 | Lang, T. and Antelo, E., "CORDIC Vectoring with Arbitrary Target Value," <i>IEEE Transactions On Computers</i> , Vol. 47, No. 7, pp. 736-749 (July 1998). |
| | AN | 4 | Madisetti, A. et al., "A 100-MHz, 16-b, Direct Digital Frequency Synthesizer with a 100-dBc Spurious-Free Dynamic Range," <i>IEEE Journal of Solid-State Circuits</i> , Vol. 34, No. 8, pp. 1034-1043 (August 1999). |
| | AO | 4 | Madisetti, A., <i>VLSI Architectures and IC Implementations for Bandwidth Efficient Communications</i> , Dissertation submitted to the University of California, Los Angeles, 132 pages (1996). |
| | AP | 4 | Meyr, H. et al., <i>Digital Communication Receivers: Synchronization, Channel Estimation, and Signal Processing</i> , John Wiley & Sons, Inc., ISBN No. 0-471-50275-8, Entire book submitted (1998). |

EXAMINER

Mr. M

DATE CONSIDERED 12/03

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

| | | | | | |
|----------------------------------|--|--|--|---|--|
| FORM PTO-1449 | | C D A T T Y. D O C K E T N O . 01997.0010003 | | A P P L I C A T I O N N O . 09/698,249 | |
| INFORMATION DISCLOSURE STATEMENT | | A P P L I C A T I O N F U E T A L . | | | |
| | | F I L I N G D A T E O c t o b e r 3 0 , 2 0 0 0 | | G R O U P 2124 | |

| U.S. PATENT DOCUMENTS | | | | | | | |
|-----------------------|-----|-----------------|------|------|-------|-----------|-------------|
| EXAMINER INITIAL | | DOCUMENT NUMBER | DATE | NAME | CLASS | SUB-CLASS | FILING DATE |
| | AA5 | | | | | | |
| | AB5 | | | | | | |
| | AC5 | | | | | | |
| | AD5 | | | | | | |
| | AE5 | | | | | | |
| | AF5 | | | | | | |
| | AG5 | | | | | | |

RECEIVED

AUG 29 2003

Technology Center 2100

FOREIGN PATENT DOCUMENTS

| EXAMINER INITIAL | | DOCUMENT NUMBER | DATE | COUNTRY | CLASS | SUB-CLASS | TRANSLATION |
|------------------|-----|-----------------|------|---------|-------|-----------|-------------|
| | AH5 | | | | | | |
| | AI5 | | | | | | |
| | AJ5 | | | | | | |

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

| | | | |
|--|----|---|---|
| | AK | 5 | Moeneclaey, M., "A Simple Lower Bound on the Linearized Performance of Practical Symbol Synchronizers," <i>IEEE Transaction on Communications</i> , Vol. COM-31, No. 9, pp. 1029-1032 (September 1983). |
| | AL | 5 | Oerder, M. and Meyr, H., "Digital Filter and Square Timing Recovery," <i>IEEE Transactions on Communications</i> , Vol. 36, No. 5, pp. 605-612 (May 1988). |
| | AM | 5 | Pollet, T. and Peeters, M., "Synchronization with DMT Modulation," <i>IEEE Communications Magazine</i> , pp. 80-86 (April 1999). |
| | AN | 5 | Proakis, J. G., <i>Digital Communications, Third Edition</i> , McGraw-Hill, Inc., ISBN No. 0-07-051726-6, Entire book submitted (1995). |
| | AO | 5 | Proakis, J.G. and Manolakis, D.G., <i>Digital Signal Processing: Principles, Algorithms, and Applications, Second Edition</i> , Macmillan Publishing Company, ISBN No. 0-02-396815-X, Entire book submitted (1992). |
| | AP | 5 | Reimers, U., "Digital Video Broadcasting," <i>IEEE Communications Magazine</i> , pp. 104-110 (June 1998). |

EXAMINER

*Am*DATE CONSIDERED *3/203*

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

| | | | |
|--|--|----------------------------------|-------------------------------|
| FORM PTO-1449 <u>INFORMATION DISCLOSURE STATEMENT</u> | | ATTY. DOCKET NO. 1997.0010003 | APPLICATION NO. 09/698,249 |
| | | APPLICANT Fu et al. | |
| | | FILING DATE October 30, 2000 | GROUP 2124 |

| U.S. PATENT DOCUMENTS | | | | | | | |
|-----------------------|--|-----------------|------|------|-------|-----------|------------------------|
| EXAMINER INITIAL | | DOCUMENT NUMBER | DATE | NAME | CLASS | SUB-CLASS | FILING DATE |
| AA6 | | | | | | | |
| AB6 | | | | | | | |
| AC6 | | | | | | | RECEIVED |
| AD6 | | | | | | | |
| AE6 | | | | | | | AUG 29 2003 |
| AF6 | | | | | | | |
| AG6 | | | | | | | Technology Center 2100 |

FOREIGN PATENT DOCUMENTS

| EXAMINER INITIAL | | DOCUMENT NUMBER | DATE | COUNTRY | CLASS | SUB-CLASS | TRANSLATION |
|------------------|-----|-----------------|------|---------|-------|-----------|-------------|
| | AH6 | | | | | | |
| | AI6 | | | | | | |
| | AJ6 | | | | | | |

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

| | | |
|----|---|---|
| AK | 6 | Sabel, L.P. and Cowley, W.G., "A Recursive Algorithm For The Estimation Of Symbol Timing In PSK Burst Modems," <i>Proc. Globecom 1992</i> , Vol. 1, pp. 360-364 (1992). |
| AL | 6 | Tan, L.K., <i>High Performance Architectures And Circuits For QAM Transceivers</i> , Dissertation submitted to the University of California, Los Angeles, 208 pages (1995). |
| AM | 6 | Tan, L.K. and Samueli, H., "A 200 MHz Quadrature Digital Synthesizer/Mixer in 0.8 μ m CMOS," <i>IEEE Journal of Solid-State Circuits</i> , Vol. 30, No. 3, pp. 193-200 (March 1995). |
| AN | 6 | Vankka, J., "Methods of Mapping from Phase to Sine Amplitude in Direct Digital Synthesis," <i>IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control</i> , Vol. 44, No. 2, pp. 526-534 (March 1997). |
| AO | 6 | Vesma, J. and Saramäki, T., "Interpolation Filters With Arbitrary Frequency Response For All-Digital Receivers," <i>Proc. 1996 IEEE Int. Symp. Circuits Syst.</i> , pp. 568-571 (May 1996). |
| AP | 6 | Vuori, J., "A Digital Multistandard Paging Receiver," <i>IEEE Transactions on Consumer Electronics</i> , Vol. 45, No. 4, pp. 1098-1103 (November 1999). |

EXAMINER

mm

DATE CONSIDERED

12/12/2003

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

| | | | |
|---|--|----------------------------------|-------------------------------|
| FORM PTO-1449 INFORMATION DISCLOSURE STATEMENT | | ATTY. DOCKET NO. 1997.0010003 | APPLICATION NO. 09/698,249 |
| | | APPLICANT Fu et al. | |
| | | FILING DATE October 30, 2000 | GROUP 2124 |

U.S. PATENT DOCUMENTS

| EXAMINER INITIAL | | DOCUMENT NUMBER | DATE | NAME | CLASS | SUB-CLASS | FILING DATE |
|------------------|-----|-----------------|------|------|-------|-----------|-------------|
| | AA7 | | | | | | |
| | AB7 | | | | | | |
| | AC7 | | | | | | |
| | AD7 | | | | | | |
| | AE7 | | | | | | |
| | AF7 | | | | | | |
| | AG7 | | | | | | |

RECEIVED

AUG 29 2003

Technology Center 2100

FOREIGN PATENT DOCUMENTS

| EXAMINER INITIAL | | DOCUMENT NUMBER | DATE | COUNTRY | CLASS | SUB-CLASS | TRANSLATION |
|------------------|-----|-----------------|------|---------|-------|-----------|-------------|
| | AH7 | | | | | | |
| ▼ | AI7 | | | | | | |
| | AJ7 | | | | | | |

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

| | | |
|----|---|--|
| AK | Z | Wang, S. et al., "Hybrid CORDIC Algorithms," <i>IEEE Transactions on Computers</i> , Vol. 46, No. 11, pp. 1202-1207 (November 1997). |
| AL | Z | Antelo, E. et al., "Redundant CORDIC Rotator Based on Parallel Prediction," pp. 172, 179, IEEE (1995). |
| AM | Z | |
| AN | Z | |
| AO | Z | |
| AP | Z | |

EXAMINER

Unsm

DATE CONSIDERED

12/20/03

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.